



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,662	10/24/2003	Sung-Su Jung	8734.246.00 - US	6340
30827	7590	12/14/2006	EXAMINER	
MCKENNA LONG & ALDRIDGE LLP			LIN, JAMES	
1900 K STREET, NW			ART UNIT	
WASHINGTON, DC 20006			PAPER NUMBER	
			1762	

DATE MAILED: 12/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/691,662

Applicant(s)

JUNG, SUNG-SU

Examiner

Jimmy Lin

Art Unit

1762

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 1-9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 10-19 is/are rejected.
- 7) ☒ Claim(s) 10 and 13 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 1/6/04, 12/15/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-9, drawn to an apparatus, classified in class 118, subclass 300.
- II. Claim 10-19, drawn to a method, classified in class 427, subclass 64.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another and materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus of invention I can be used to make an electroluminescent device.

3. Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.

4. Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions require a different field of search (see MPEP § 808.02), restriction for examination purposes as indicated is proper.

5. During a telephone conversation with Rebecca Rudich on November 22, 2006 a provisional election was made with traverse to prosecute the invention of Group II, claims 10-19. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-9 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Objections

6. Claims 10 and 13 are objected to because of the following informalities:

Claim 10 is dependent of a claim that is withdrawn from consideration. The dependency of claim 10 should be changed in Applicant's next response. However, the claim will still be interpreted to include all the limitations of the withdrawn claim.

Claim 13 should ^{amend} ~~be amended to~~ "loading a substrate having first and second image display parts onto the first table" to recite "loading a substrate having a first plurality of image display parts and a second plurality of image display parts onto the first table" in order to clarify the claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 11-12 and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto et al. (U.S. Publication 2001/0013920), in view of Komine et al. (U.S. Patent 5,292,368).

Hashimoto teaches a method of making a liquid crystal display panel (abstract). A substrate 21a is placed on a table 31, and liquid crystal is injected onto the substrate through a nozzle of a syringe ([0050]; Fig. 14). The syringe can be attached to a robot arm [0153].

Hashimoto does not explicitly teach a plurality of robot arms having syringes and arranging the plurality of robot arms on opposing sides of the table.

Komine teaches a method applying a coating onto a display device. The coating is applied using a plurality of robot arms arranged on opposing sides of the table. The selection of something based on its known suitability for its intended use has been held to support a prima facie case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65

USPQ 297 (1945). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have used a plurality of robot arms having a syringe of Hashimoto attached to each arm and to have arranged the robot arms on opposite sides of the table with a reasonable expectation of success because Komine teaches that it is well known in the art of coating display devices to use a plurality of robot arms arranged on opposing sides of a table.

In addition, the mere duplication of parts has no patentable significance unless a new and unexpected result is produced (See MPEP 2144.04.VI.B.), thus rendering a plurality of robot arms having syringes as an obvious modification over Hashimoto.

9. Claims 12-13 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto '920 in view of Komine '368 as applied to claim 11 above, and further in view of Shinoda (JP 2001-235758, as provided by the Applicant).

Hashimoto does not explicitly teach that the sealant can be dispensed using a syringe. However, Hashimoto teaches that the sealant can be dispensed by any sort of method wherein the sealant is injected on the substrate through a nozzle [0046]. Hashimoto also teaches that the syringe can be used to inject material onto the substrate through the nozzle of the syringe [0050]. The selection of something based on its known suitability for its intended use has been held to support a prima facie case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). Accordingly, it would have been obvious to one of ordinary skill in the art at the time of invention to have used the syringe of Hashimoto to inject the sealant onto the substrate with a reasonable expectation of success because Hashimoto teaches that the nozzle of the syringe is suitable for injecting a material onto an LCD substrate.

Hashimoto does not explicitly teach a substrate having first and second image display parts. However, Shinoda teaches that an LCD substrate can have first and second image display parts (Fig. 4). The selection of something based on its known suitability for its intended use has been held to support a prima facie case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have used a substrate having first and second image display parts as the particular substrate of Hashimoto with a reasonable expectation of success because Shinoda teaches that such an LCD substrate is suitable in the art.

Art Unit: 1762

Hashimoto, Komine, and Shinoda do not explicitly teach that a plurality of robot arms are arranged on a first and second table. However, the mere duplication of parts has no patentable significance unless a new and unexpected result is produced (See MPEP 2144.04.VI.B.). Therefore, using multiple tables having a plurality of robot arms is an obvious modification over using a single table.

Hashimoto, Komine, and Shinoda do not explicitly teach that a first seal pattern is formed on a first table and a second seal pattern is formed on a second table. However, Shinoda teaches forming seal patterns around the first and second image display parts. One of ordinary skill in the art would have recognized that forming the seal patterns in multiple steps would have achieved similar results as forming the patterns in a single step. Accordingly, forming the seal around the first image display parts in a separate step from forming the seal around the second image display parts would have been an operable equivalent of forming the seals in a single step (i.e., on a single table). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have formed a plurality of first seal patterns around the first image display parts (i.e., on a first table) separately from forming a plurality of second seal patterns around the second image display parts (i.e., on a second table) because forming the seal patterns in either a single step or multiple steps would have achieved similar results.

10. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto '920 in view of Komine '368 and Shinoda '758, as applied to claim 13 above, and further in view of Hachiman et al. (JP 2001-356353, as provided by the Applicant).

Hashimoto, Komine, and Shinoda do not explicitly teach moving the table along horizontal forward/backward and left/right directions. However, Hachiman teaches a method of depositing materials from a nozzle onto an LCD substrate while moving the table in the XY-direction [0012]-[0014]. The selection of something based on its known suitability for its intended use has been held to support a prima facie case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have deposited the materials onto an LCD substrate by moving the table as opposed to moving the nozzle as taught in

Hashimoto with a reasonable expectation of success because Hashiman teaches that such a method is operable for depositing material from a nozzle onto an LCD substrate.

11. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto '920 in view of Komine '368 and Shinoda '758, as applied to claim 13 above, and further in view of Yamamoto et al. (JP 61-055625, as provided by the Applicant).

Hashimoto, Komine, and Shinoda are discussed above, but do not explicitly teach that the first plurality of image display parts each have a first size and the second plurality of image display parts each have a second size different from the first size. However, Yamamoto teaches that LCD substrates can have image display parts of different sizes (Figs. 1-2). The selection of something based on its known suitability for its intended use has been held to support a prima facie case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have the first plurality of image display parts each having a first size different from a second size of the second plurality of image display parts on the substrate of Hashimoto and Shinoda with a reasonable expectation of success because Yamamoto teaches that such substrates having different sizes of image display parts are suitable in the art of LCDs.

12. Claims 12, 15-17, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto '920 in view of Komine '368 and Shinoda '758, as applied to claim 13 above, and further in view of Hashimoto et al. (2003/0083203).

Hashimoto '920, Komine, and Shinoda are discussed above, but do not explicitly teach forming a plurality of silver dots at the outer edges of the image display parts using the syringes. However, Hashimoto '203 teaches that conductive fine particles, such as silver, can be dropped onto an LCD substrate from a nozzle [0102]-[0104], wherein the silver is dropped in the form of dots at the outer edges of the image display to prevent breaks and short circuits ([0191]-[0195]; Fig. 8). Hashimoto '920 teaches that materials can be deposited onto an LCD substrate by dropping the material through the nozzle of a syringe. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have connected the upper and lower substrates of Hashimoto '920 using the silver dots of Hashimoto '203 in order to have prevented

breaks and short circuits. In addition, it would have been obvious to one of ordinary skill in the art at the time of invention to have dropped the silver dots onto the LCD substrate using the syringe of Hashimoto '920 because Hashimoto '920 teaches that such syringes have nozzles that are suitable for dropping material. The selection of something based on its known suitability for its intended use has been held to support a prima facie case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945).

Hashimoto '920, Komine, Shinoda, and Hashimoto '203 do not explicitly teach that the sealant, liquid crystals, and silver dots are formed on separate tables. However, such is obvious for substantially the same reasons as discussed above for claim 13.

Double Patenting

13. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

14. Claims 10-12 and 18-19 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 16-25 of copending Application No. 10/825,362. Although the conflicting claims are not identical, they are not patentably distinct from each other because the current claims require different combinations and permutations of the claimed features of '362. '362 does not claim that the plurality of robot arms

Art Unit: 1762

having syringes are arranged on opposing sides of a table. However, such is obvious for substantially the same reasons as discussed above.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

15. Claims 13-17 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 16-25 of copending Application No. 10/825,362 in view of Ogino et al. (JP 2001-330840, as provided by the Applicant). '362 does not claim that A) the sealant is applied around the display parts, B) liquid crystal can be dispensed from the nozzles of the syringes, and C) the substrate can be moved to different tables. However, Ogino teaches that A) the sealant can be applied around first and second image display parts (Fig. 6) for an LCD element in order to improve the display quality of the LCD (abstract) and B) liquid crystal can be applied by dripping. The syringe/nozzle setup of '362 is suitable for applying material by dripping onto a substrate. The selection of something based on its known suitability for its intended use has been held to support a prima facie case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have dripped liquid crystal onto the LCD substrate of '362 because Ogino teaches that such a method is suitable for applying liquid crystals onto a substrate. In addition, it would have been obvious to one of ordinary skill in the art at the time of invention to have applied the sealant around the first and second image display parts in order to provide a seal around the liquid crystals.

'362 and Ogino does not teach that C) the substrate is transferred to different tables. However, the substrate of '362 must be placed on some sort of table, and the mere duplication of parts has no patentable significance unless a new and unexpected result is produced (See MPEP 2144.04.VI.B.)

This is a provisional obviousness-type double patenting rejection.

16. Applicant is advised that should claims 11-12 be found allowable, claims 18-19 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing,

Art Unit: 1762

despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

17. Applicant is advised that should claim 15 be found allowable, claim 16 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Conclusion

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Song (U.S. Patent 6,252,643) teaches connecting upper and lower LCD substrates using silver dots. Hayashi et al. (U.S. Patent 4,869,935) teaches the use of a plurality of robotic arms arranged on opposing sides.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jimmy Lin whose telephone number is 571-272-8902. The examiner can normally be reached on Monday thru Friday 8AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 10/691,662
Art Unit: 1762

Page 10

JL
JL


KEITH HENDRICKS
PRIMARY EXAMINER